

CLAIMS:

We claim:

1. A method for processing off-line interactive content in a dynamic system with variable addressability, the method comprising the steps of:
  - serving content for caching in a client device;
  - generating a pathway navigation map (PNM) for said served content; and,
  - annotating said served content with endpoint directives for modifying hyperlink behavior referenced by said directives in said cached content.
2. The method of claim 1, wherein said generating step comprises the steps of:
  - forming a document tree having a plurality of nodes;
  - assigning each node of said tree to a document in said content accessible through a hyperlink referenced by a parent node; and,
  - disposing within each node a set of hyperlink references to child pages in said content and a reference to a pathway to a root node of said document tree.
3. The method of claim 1, wherein said annotating step comprises the step of annotating said content with at least one endpoint directive selected from the group consisting of take no action, remove all hyperlinks referenced by said directive, deactivate all hyperlinks referenced by said directive, point all hyperlinks referenced by said directive to a currently loaded page; and point all hyperlinks referenced by said directive to a parent page.

4. The method of claim 1, wherein said annotating step comprises the step of annotating said served content with at least one endpoint directive to invoke an action modifying all hyperlinks referenced by said directive when a specified depth within said content has been reached.

5. The method of claim 3, wherein said annotating step comprises the step of annotating said served content with at least one endpoint directive to invoke an action modifying all hyperlinks referenced by said directive when a specified depth within said content has been reached.

6. The method of claim 1, further comprising the step of processing off-line submissions of content by navigating said PNM to reconcile on-line changes in hyperlinks in said content.

7. The method of claim 6, wherein said processing step further comprises the step of utilizing a specific element of said hyperlinks to reconcile ambiguities generated by changes in hyperlinks in said content.

8. A method for processing off-line interactive content in a dynamic system with variable addressability, the method comprising the steps of:  
receiving a request for an initial page of a Web application;  
annotating said initial page with a set of hyperlinks referenced within said initial page;

retrieving additional pages associated with said set of hyperlinks and repeating said receiving, annotating and retrieving steps for all hyperlinks referenced within said additional pages;

generating a pathway navigation map for said hyperlinks; and,  
processing submitted content produced in an off-line interactive session with said initial page and said additional pages by reconciling hyperlinks in said submitted content by traversing said pathway navigation map.

9. A machine readable storage having stored thereon a computer program for processing off-line interactive content in a dynamic system with variable addressability, the computer program comprising a routine set of instructions for causing the machine to perform the steps of:

serving content for caching in a client device;  
generating a pathway navigation map (PNM) for said served content; and,  
annotating said served content with endpoint directives for modifying hyperlink behavior referenced by said directives in said cached content.

10. The machine readable storage of claim 9, wherein said generating step comprises the steps of:

forming a document tree having a plurality of nodes;  
assigning each node of said tree to a document in said content accessible through a hyperlink referenced by a parent node; and,

disposing within each node a set of hyperlink references to child pages in said content and a reference to a pathway to a root node of said document tree.

11. The machine readable storage of claim 9, wherein said annotating step comprises the step of annotating said content with at least one endpoint directive selected from the group consisting of take no action, remove all hyperlinks referenced by said directive, deactivate all hyperlinks referenced by said directive, point all hyperlinks referenced by said directive to a currently loaded page; and point all hyperlinks referenced by said directive to a parent page.

12. The machine readable storage of claim 9, wherein said annotating step comprises the step of annotating said served content with at least one endpoint directive to invoke an action modifying all hyperlinks referenced by said directive when a specified depth within said content has been reached.

13. The machine readable storage of claim 11, wherein said annotating step comprises the step of annotating said served content with at least one endpoint directive to invoke an action modifying all hyperlinks referenced by said directive when a specified depth within said content has been reached.

14. The machine readable storage of claim 9, further comprising the step of processing off-line submissions of content by navigating said PNM to reconcile on-line changes in hyperlinks in said content.

15. The machine readable storage of claim 14, wherein said processing step further comprises the step of utilizing a specific element of said hyperlinks to reconcile ambiguities generated by changes in hyperlinks in said content.

16. A machine readable storage having stored thereon a computer program for processing off-line interactive content in a dynamic system with variable addressability, the computer program comprising a routine set of instructions for causing the machine to perform the steps of:

receiving a request for an initial page of a Web application;

annotating said initial page with a set of hyperlinks referenced within said initial page;

retrieving additional pages associated with said set of hyperlinks and repeating said receiving, annotating and retrieving steps for all hyperlinks referenced within said additional pages;

generating a pathway navigation map for said hyperlinks; and,

processing submitted content produced in an off-line interactive session with said initial page and said additional pages by reconciling hyperlinks in said submitted content by traversing said pathway navigation map.

17. A system for processing off-line interactive content in a dynamic system with variable addressability comprising:

an off-line server process configured for coupling to an off-line client process across an occasionally connected network;

Web application content defined by a plurality of documents; and,  
an interactive content processor configured to serve content for caching by said  
client process, to generate a pathway navigation map (PNM) for said served content;  
and, to annotate said served content with endpoint directives for modifying hyperlink  
behavior referenced by said directives in said cached content.